

IS 3989 : 2009

(Reaffirmed 2014)
(Reaffirmed 2020)

भारतीय मानक

लोहे के स्पिगट तथा सॉकेट, अपकेन्द्री ढले (स्पन) मल,
अपशिष्ट, सवांतन और बरसाती-पानी के पाइप, फिटिंग्स
और सहायकांग — विशिष्टि
(तीसरा पुनरीक्षण)

Indian Standard

CENTRIFUGALLY CAST (SPUN) IRON SPIGOT AND
SOCKET SOIL, WASTE, VENTILATING AND
RAINWATER PIPES, FITTINGS AND
ACCESSORIES — SPECIFICATION
(*Third Revision*)

ICS 77.140.75; 91.140.80

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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Price Group 9

FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Pig Iron and Cast Iron Sectional Committee had been approved by the Metallurgical Engineering Division Council.

This standard was first published in 1967 and revised in 1970 and 1984. While reviewing this standard in the light of the experience gained during these years, the Committee decided that the standard may be further revised.

In this standard, title and scope have been modified incorporating rainwater pipes earlier covered in IS 1230 : 1979 'Cast iron rainwater pipes and pipe fittings (*second revision*)'. Following are the main modifications which have been made in this revision:

- a) All amendments (Amendments No. 1 to 5) except Amendment No. 1 issued earlier have been incorporated.
- b) The requirement of 200 mm dia pipe and fittings, mass of socket and pipe with socket have been incorporated.
- c) Various clauses have been aligned with the other existing standards for uniformity.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the results of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

CENTRIFUGALLY CAST (SPUN) IRON SPIGOT AND SOCKET SOIL, WASTE, VENTILATING AND RAINWATER PIPES, FITTINGS AND ACCESSORIES — SPECIFICATION

(*Third Revision*)

1 SCOPE

1.1 This standard covers requirements for centrifugally cast (spun) iron spigot and socket soil, waste, ventilating and rainwater pipes together with the details of the fittings and accessories.

1.2 The fittings and accessories covered in this standard shall be manufactured by sand casting method.

2 REFERENCES

The following Indian Standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
210 : 1993	Grey iron castings (<i>fourth revision</i>)
1387 : 1993	General requirements for the supply of metallurgical materials (<i>second revision</i>)
1500 : 2005/ ISO 6506-1: 1999	Method for Brinell hardness test for metallic materials (<i>third revision</i>)
1865 : 1991	Iron castings with spheroidal or nodular graphite (<i>third revision</i>)
5519 : 1979	Deviations for untoleranced dimensions and mass of grey iron castings (<i>first revision</i>)

3 SUPPLY OF MATERIAL

General requirements relating to supply of material shall be as laid down in IS 1387.

4 MANUFACTURE

4.1 The metal used for the manufacturing of casting shall conform to the appropriate grades as specified in IS 210 or IS 1865.

4.2 The pipes and fittings shall be stripped with all precautions necessary to avoid warping or shrinking defects. The pipes and fittings shall be free from defects, other than any unavoidable surface imperfections which result from the method of manufacture and which do not affect the use of the fittings. By agreement between the purchaser and the manufacturer minor defects may be rectified.

4.3 The pipes and fittings shall be capable of being cut with the tools normally used for installation. In case of dispute they shall be considered acceptable provided the hardness of the external unmachined surface of pipes does not exceed 230 HBW when tested according to IS 1500.

4.3.1 In case hardness is higher than 230 HBW, a destructive test shall be carried out for observing the fracture which shall be grey (without chilling effect).

4.4 In case of rubber joints, the spigot ends shall be suitably chamfered or smooth entry of pipe in the socket fitted with the rubber gasket.

4.5 Beads may be provided to the fittings. Dimensions of the bead are at the discretion of manufacturer.

5 HAMMER TEST

Each pipe, when tested for soundness by striking with a light hand hammer, shall emit a clear ringing sound.

6 HYDROSTATIC TEST

6.1 The pipes and fittings shall be tested hydrostatically at a pressure of 0.07 MPa (N/mm²). These shall not show any sign of leakage, sweating or other defects of any kind.

6.2 The pressure shall be applied internally and shall be steadily maintained for a period of 15 s.

6.3 Test shall be carried out after the application of surface coating.

7 SIZES AND MASS

7.1 The range of nominal diameter, DN, of pipes and fittings followed in this standard is as follows:

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50 mm, 75 mm, 100 mm, 150 mm and 200 mm

NOTE — Nominal diameter, DN is a number used to classify pipes and corresponds approximately to their internal diameter.

7.2 Dimensions of socket and spigot of pipes for nominal diameter specified are given in Table 1.

7.3 Nominal thickness, dimensions and approximate mass of uncoated pipes and fittings are given in Tables 2 to 22. Specific mass of cast iron is taken as 7.15 kg/dm³ for the purpose of calculation.

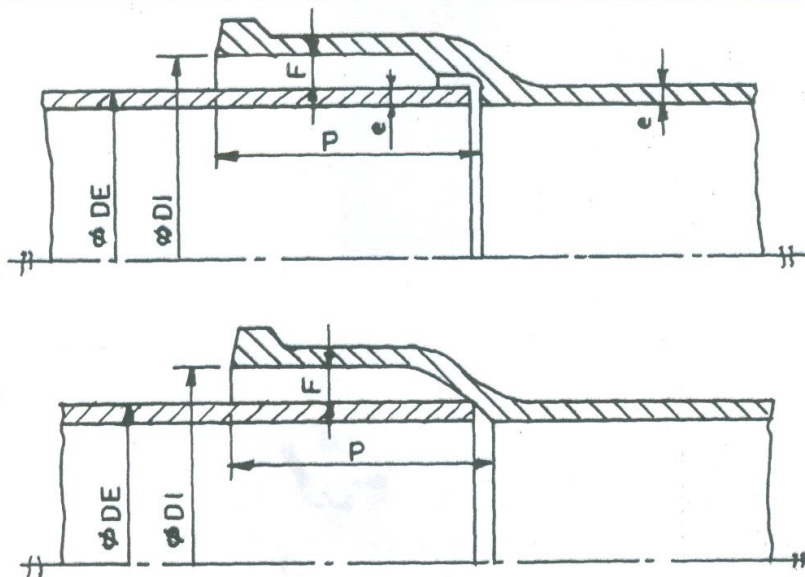
8 TOLERANCES

8.1 Tolerances on external diameter of the barrel, internal diameter of the socket and the depth of the socket shall be as follows (*see* Fig. in Table 1).

Dimensions	Nominal Diameter DN mm	Tolerance for Lead Joint mm	Tolerance for Rubber Joint mm
i) External diameter of barrel, <i>DE</i>	50, 75	± 3.0	+ 3.0 – 0
	100	± 3.5	± 3.5 – 0
	150	± 4.0	± 4.0 – 0
ii) Internal diameter of socket, <i>DI</i>	All diameters	± 3.0	+ 3.0 – 0
iii) Depth of socket, <i>P</i>	All diameters	± 10	± 10

Table 1 Dimensions of Sockets and Spigots of Pipe
(Clause 7.2)

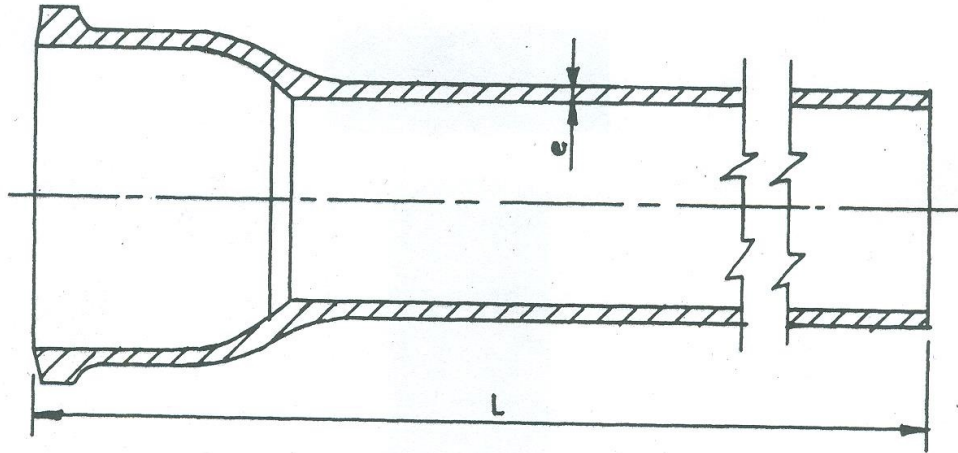
All dimensions in millimetres.



Nominal Diameter <i>DN</i>	Barrel		Socket		Joint Thickness <i>F</i>
	<i>e</i>	<i>DE</i>	<i>DI</i>	<i>P</i>	
(1)	(2)	(3)	(4)	(5)	(6)
50	3.5	57	73	60	8.0
75	3.5	83	99	65	8.0
100	4.0	109	126	70	8.5
150	5.0	161	179	75	9.0
200	6.0	212	242	85	15.0

Table 2 Approximate Mass of Socket and Spigot Pipes
(Clause 7.3)

All dimensions in millimetres.



Nominal Diameter <i>DN</i>	Thickness <i>e</i>	Socket Mass kg	Nominal Mass in kg Including Mass of Socket for Pipes of Length (<i>L</i>) in Metres					
			3.000 kg	2.500 kg	2.000 kg	1.800 kg	1.500 kg	1.000 kg
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
50	3.5	0.79	13.4	11.3	9.2	8.4	7.1	5.0
75	3.5	1.50	20.0	16.8	13.8	12.5	10.6	7.4
100	4.0	2.00	30.0	25.5	21.0	18.8	16.0	11.2
150	5.0	3.51	56.0	47.0	38.5	34.9	29.5	21.0
200	6.0	7.00	90.0	70.9	56.7	51.0	42.5	33.0

NOTES

1 Pipes of intermediate lengths may be obtained by cutting a longer pipe.

2 Double socketed pipes may also be supplied for the following sizes:

Nominal Diameter	Approximate Mass in kg for Double Socketed Pipe of Length (<i>L</i>) in Metres	
<i>DN</i>	3.000	1.800
75	24	17
100	34	21
150	58	29

3 Cut lengths of sizes 300 mm, 450 mm, 600 mm and 900 mm may be supplied.

4 Subject to agreement between the supplier and the purchaser, pipes of length metre to three metres may also be supplied.

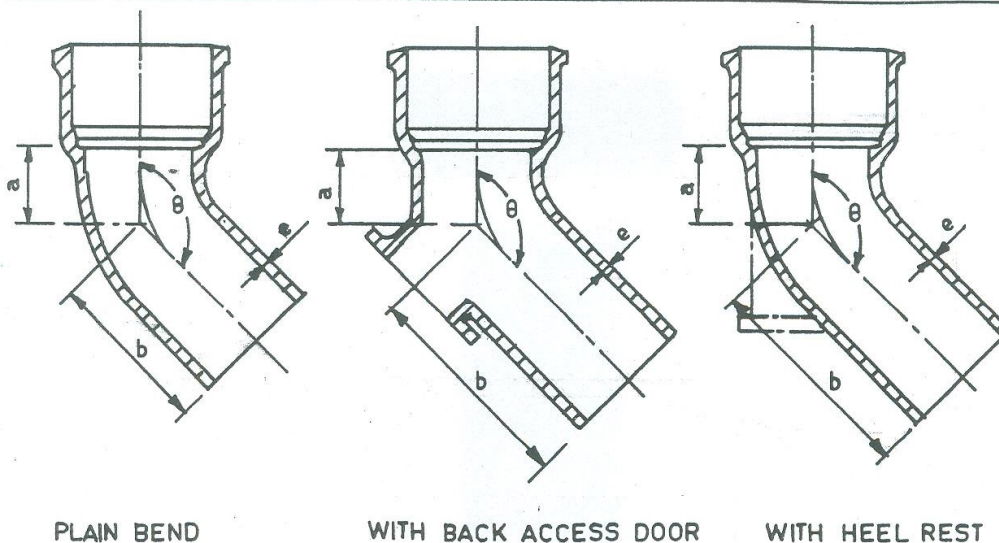
5 Mass of the barrel shall be calculated on cut lengths on proportionate basis.

6 The socket weights are for guidance only. However, the weight of pipes including socket will remain as per this table.

Table 3 Bends With and Without Access Doors

(Clause 7.3)

All dimensions in millimetres.



Angle θ	Nominal Diameter DN	Dimensions			Approximate Mass of Bend kg		
		<i>e</i>	<i>a</i>	<i>b</i>	Plain	With Door	With Heel Rest
92°	50	3.5	65	123	1.5	1.8	1.7
	75	3.5	78	140	2.4	2.8	2.7
	100	4.0	91	157	3.8	4.4	4.3
	150	5.0	117	186	7.9	8.7	8.7
	200	6.0	165	285	17.0	—	—
112°	50	3.5	52	110	1.5	1.8	1.7
	75	3.5	61	123	2.3	2.7	2.6
	100	4.0	71	137	3.6	4.2	4.1
	150	5.0	90	158	7.3	8.1	8.1
135°	50	3.5	41	94	1.4	1.7	1.6
	75	3.5	47	104	2.1	2.5	2.4
	100	4.0	53	114	3.3	3.9	3.8
	150	5.0	65	129	6.5	7.3	7.3
	200	6.0	80	206	15.0	—	—

NOTES

1 For socket and spigot dimensions, see Table 1.

2 For details of access door, see Table 8. The centre of an access door when fitted, should be approximately symmetrical with the centre line of the fitting and as near the intersection of the two axes as possible.

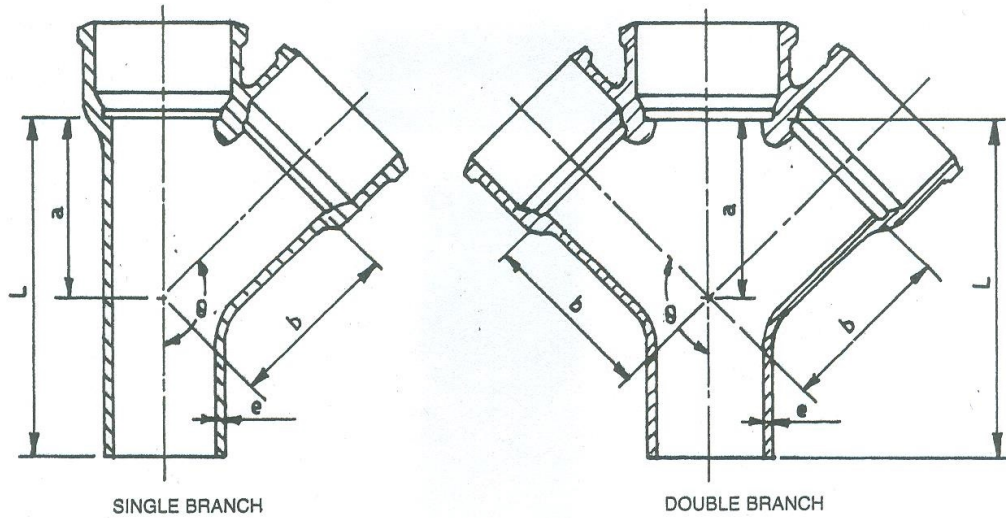
3 Width of base plate of heel rest should be two-thirds of diameter. Thickness should not be less than 6 mm.

4 Thickness of web shall be not less than 4 mm from outside edge of the pipe.

5 In case of 135° bend to be supplied with door and heel rest, the dimension 'b' of 92 ½° Bend shall be applicable.

Table 4 Equal Branches With and Without Access Door
(Clause 7.3)

All dimensions in millimetres.



Angle θ	Nominal Diameter DN	Dimensions				Approximate Mass of Single Branch		Approximate Mass of Double Branch	
		e	L	a	b	Plain kg	With Door kg	Plain kg	With Door kg
92°	50	3.5	176	38	38	2.3	2.6	3.0	3.2
	75	3.5	207	52	52	3.6	4.0	4.6	5.0
	100	4.0	238	66	66	5.7	6.3	7.2	78.0
	150	5.0	294	93	93	1.4	12.2	14.3	15.1
	200	6.0	385	125	125	23.5	—	—	—
112°	50	3.5	168	53	53	2.3	2.6	3.2	3.5
	75	3.5	200	72	72	3.7	4.1	4.9	5.3
	100	4.0	233	91	91	5.8	6.4	7.7	8.3
	150	5.0	293	130	130	12.0	12.8	15.4	16.2
135°	50	3.5	192	88	88	2.5	2.8	3.4	3.7
	75	3.5	233	119	119	4.1	4.5	5.3	5.7
	100	4.0	276	152	152	6.6	7.2	8.6	9.4
	150	5.0	355	216	216	14.0	14.8	17.2	18.0
	200	6.0	460	295	300	35.0	—	—	—

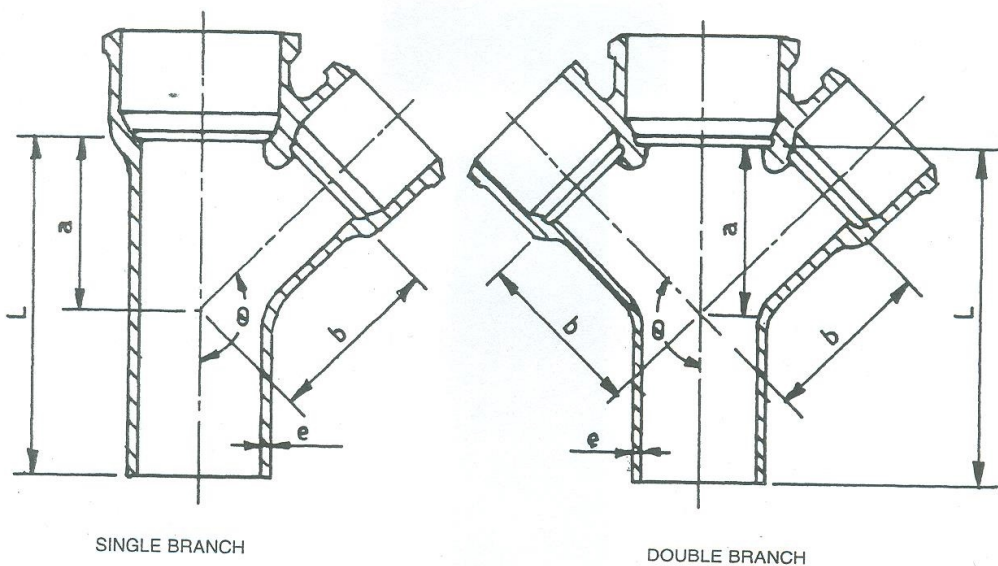
NOTES

1 For socket and spigot dimensions, see Table 1.

2 For details of access door, see Table 8.

Table 5 Unequal Branches With and Without Access Door
(Clause 7.3)

All dimensions in millimetres.



Angle θ	Nominal Diameter DN		Dimensions				Approximate Mass of Single Branch		Approximate Mass of Double Branch	
			e	L	a	b	Plain kg	With Door kg	Plain kg	With Door kg
92°	75	50	3.5	181	39	51	3.1	3.5	3.8	4.2
	100	50	3.5	190	40	63	4.2	4.8	4.8	5.4
	100	75	4.0	211	52	65	4.9	5.5	6.0	6.6
	150	100	5.0	242	67	92	9.1	9.9	10.5	11.3
	200	100	6.0	325	100	160	17.5	—	—	—
	200	150	6.0	325	125	175	18.0	—	—	—
112°	75	50	3.5	175	60	69	3.1	3.6	3.9	4.4
	100	50	3.5	185	70	85	4.9	5.5	5.0	5.6
	100	75	4.0	208	80	89	5.0	5.8	6.2	7.0
	150	100	5.0	241	105	123	9.3	10.1	11.4	12.2
135°	75	50	3.5	197	101	106	3.3	3.7	4.0	4.4
	100	50	3.5	210	115	125	4.3	4.9	5.2	5.8
	100	75	4.0	239	133	139	5.5	6.1	6.4	7.0
	150	100	5.0	283	179	190	10.6	11.4	12.3	13.1
	200	75	6.0	355	200	210	17.0	—	—	—
	200	100	6.0	355	230	250	20.9	—	—	—
	200	150	6.0	395	275	295	26.0	—	—	—

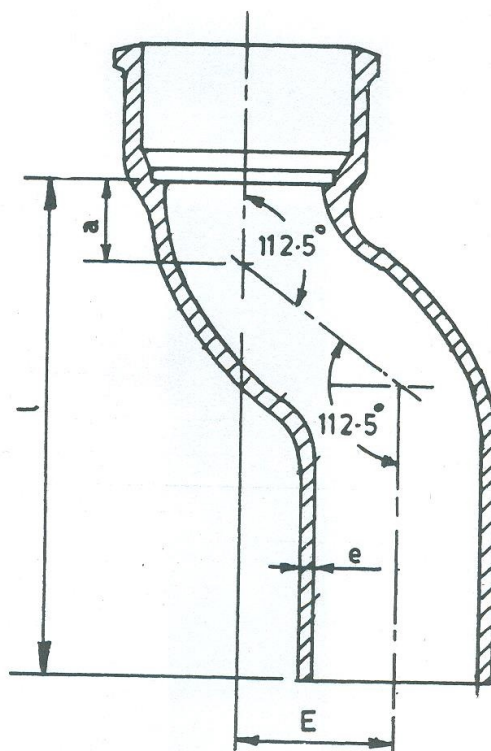
NOTES

1 For socket and spigot dimensions, see Table 1.

2 For details of access door, see Table 8.

Table 6 Off Sets
(Clause 7.3)

All dimensions in millimetres.

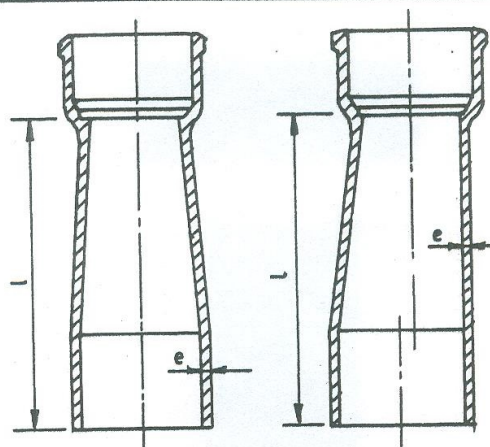


Offset <i>E</i>	Nominal Diameter <i>DN</i>	Dimensions			Approximate Mass kg
		<i>a</i>	<i>e</i>	<i>L</i>	
75	50	40	3.5	200	1.8
	75	45	3.5	225	2.7
	100	55	4.0	250	4.3
	150	75	5.0	275	8.4
115	50	40	3.5	200	1.9
	75	45	3.5	225	2.9
	100	55	4.0	250	4.5
	150	75	5.0	290	8.8
150	50	40	3.5	200	2.0
	75	45	3.5	225	3.1
	100	55	4.0	250	4.8
	150	75	5.0	300	9.5

NOTE — For socket and spigot dimensions, see Table 1.

Table 7 Taper
(Clause 7.3)

All dimensions in millimetres.



Nominal Diameter		Dimensions		Approximate Mass kg
Spigot DN	Socket DN	<i>e</i>	<i>l</i>	
75	50	3.5	200	1.9
100	50	4.0	200	2.3
100	75	4.0	200	2.9
150	100	5.0	200	4.8

NOTE — For socket and spigot dimensions, see Table 1.

8.1.1 The maximum and minimum jointing space resulting from these tolerances shall be such that the jointing of the pipe and fittings is not adversely affected.

8.2 The tolerance on length of the pipes shall be ± 20 mm.

8.3 The tolerances on dimensions of fittings shall be as given below:

Type of Casting	Dimension	Tolerance, mm
Bend pipes	<i>a</i>	+ 25 – 10
	<i>b</i>	+ 20 – 10
Branches with equal branch pipes	<i>a</i>	+ 25 – 10
	<i>b</i>	+ 25 – 10
Branches with unequal branch pipe	<i>L</i>	+ 30 – 20
	<i>L</i>	+ 50 – 10
S shape casting	<i>L</i>	+ 25 – 10
	<i>L</i>	+ 25 – 10
Taper collars	<i>L</i>	+ 25 – 10
	<i>L</i>	+ 25 – 10
Others	<i>L</i>	+ 20 – 10
	<i>L</i>	+ 20 – 10

8.4 Tolerance on wall thickness shall be limited to –15 percent. No limit for plus tolerance is specified.

8.5 Untoleranced dimensions given in the standard are for guidance only.

8.6 Tolerance on mass shall be limited to –10 percent. No limit for plus tolerance is specified.

9 COATING

9.1 Each pipe and fitting shall be coated in accordance with 9.1.1 to 9.1.5.

9.1.1 Coating shall not be applied to any pipe or fitting unless its surface is clean, dry and free from rust.

9.1.2 Unless otherwise agreed to between the purchaser and the manufacturer, all pipes and fittings shall be coated externally and internally with the same material. Pipes and fittings shall be dipped in a bath containing uniformly heated composition having tar or other suitable base.

9.1.3 The coating material shall set rapidly with good adherence and shall not scale off.

9.1.4 In all cases, where the coating material has a tar or similar base, it shall be smooth, tenacious and hard enough not to flow when exposed to a temperature of 65°C but not so brittle at a temperature of 0°C as to chip off when scribed lightly with a penknife.

9.1.5 In the case of pipes and fittings, which are imperfectly coated or where coating does not set or conform to the qualities specified in 9.1.1 to 9.1.4, the coating shall be removed and the pipes or fitting recoated.

10 MARKING

10.1 Each pipe and fitting shall be cast, stamped or indelibly painted on it the following:

- a) Manufacturer's name, initials or identification mark;

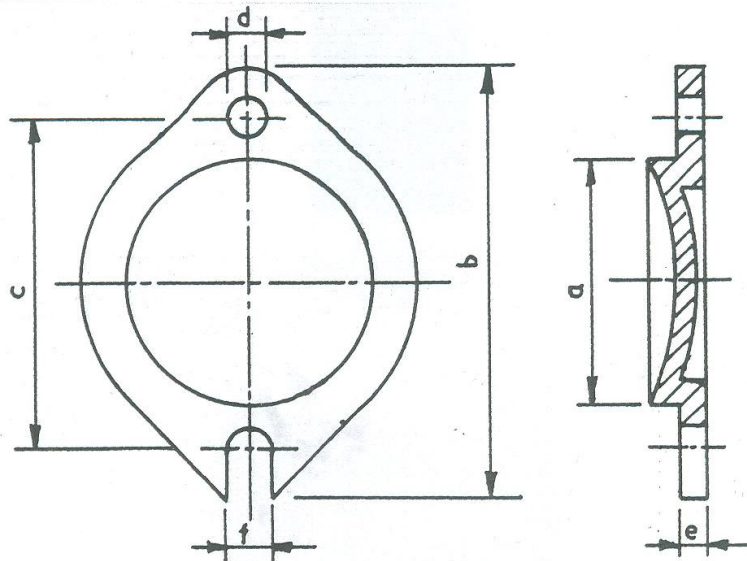
- b) The nominal diameter;
- c) The last two digits of the year of manufacture; and
- d) Any other mark required by the purchaser.

10.2 BIS Certification Marking

The pipe and fitting may also be marked with the Standard Mark.

10.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Table 8 Access Door
(Clause 7.3; and Note 2 of Tables 3, 4 and 5)
All dimensions in millimetres.

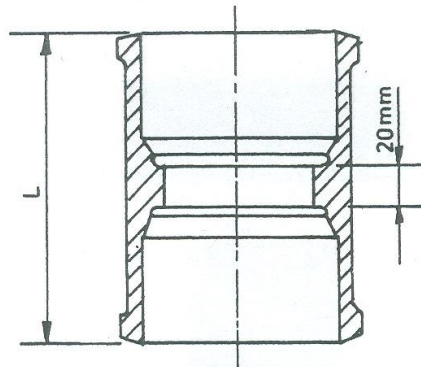


Nominal Diameter DN	Dimensions						Approximate Mass kg
	e	a	b	c	d	f	
50	6	35	73	55.0	8	8	0.11
75	6	55	93	75.0	8	8	0.22
100	6	75	133	105.0	12	12	0.35
150	6	95	153	125.0	12	12	0.63

NOTE — Screws shall be of brass or cadmium plated steel.

Table 9 Collars (Double Socket)
(Clause 7.3)

All dimensions in millimetres.

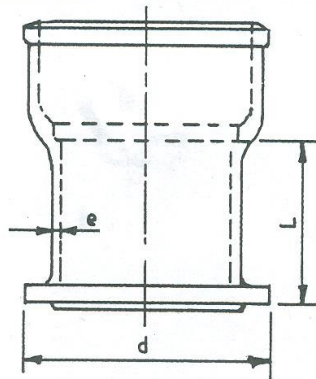


Nominal Diameter <i>DN</i>	<i>L</i>	Approximate Mass kg
50	140	1.6
75	150	2.3
100	160	3.4
150	170	6.4
200	195	11.5

NOTE — For socket and spigot dimensions, *see* Table 1.

Table 10 Connectors (C.I. to Stoneware)
(Clause 7.3)

All dimensions in millimetres.

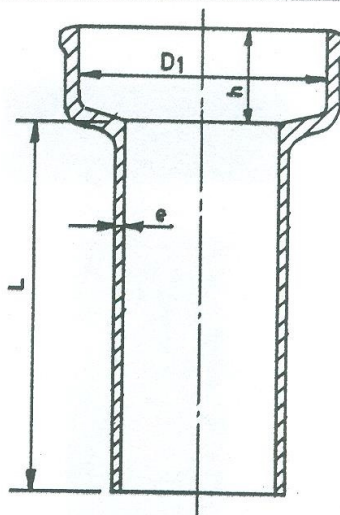


Nominal Diameter <i>DN</i>	Dimensions			Approximate Mass kg
	<i>L</i>	<i>d</i>	<i>e</i>	
100	100	145	4.0	3.2
150	100	200	5.0	5.6

NOTE — For socket and spigot dimensions, *see* Table 1.

Table 11 Connectors (Stoneware to C.I.)
(Clause 7.3)

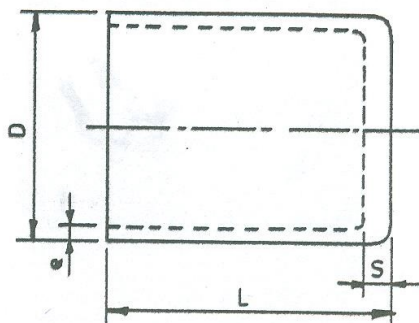
All dimensions in millimetres.



Nominal Diameter DN	Dimensions				Approximate Mass kg
	e	D_1	h	L	
100	4.0	160	60	230	4.7
150	5.0	220	70	270	9.4

Table 12 Connectors — Plug (Stopper)
(Clause 7.3)

All dimensions in millimetres.

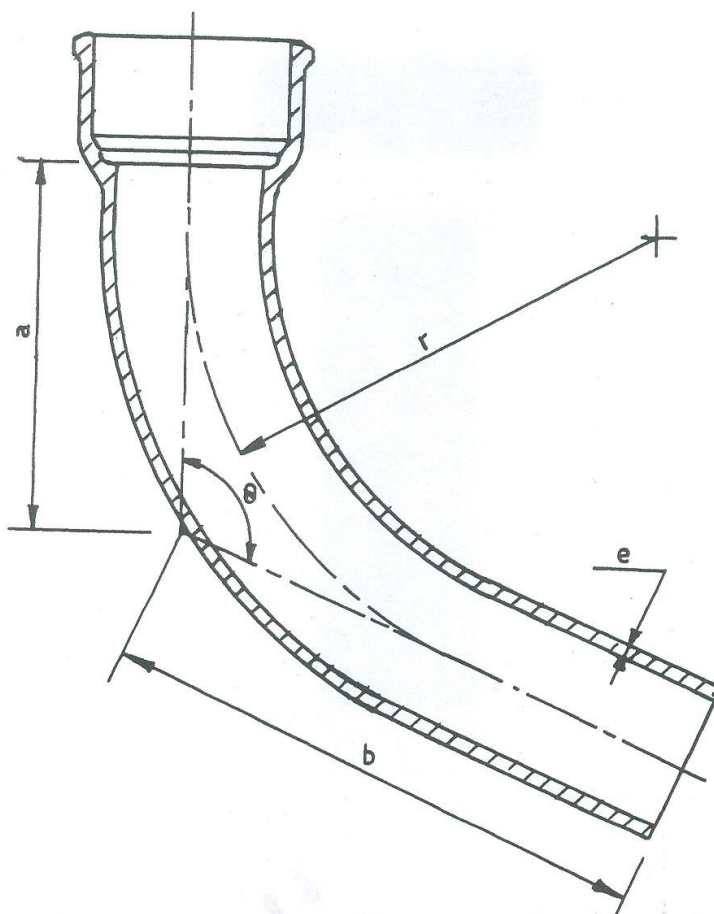


Nominal Diameter DN	Dimensions				Approximate Mass kg
	e	S	D	L	
50	3.5	7	57	75	0.5
75	3.5	7	83	80	0.7
100	4.0	8	109	85	1.4
150	5.0	8	161	90	2.8

NOTE — For tolerances on external diameter D , see 8.1.

Table 13 Larger Radius Bends
(Clause 7.3)

All dimensions in millimetres.

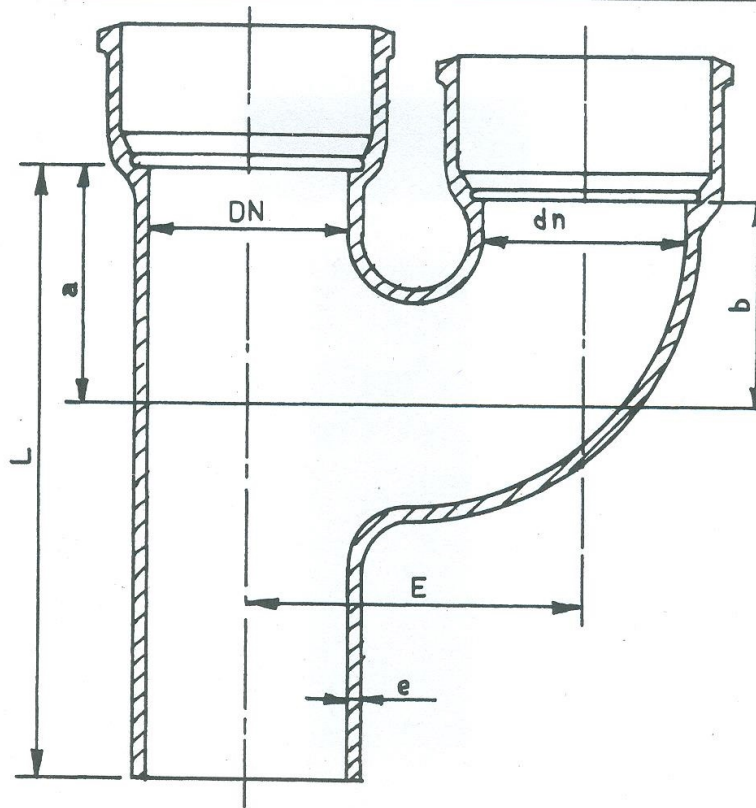


Angle θ	Nominal Diameter DN	Dimensions				Approximate Mass kg
		e	a	b	r	
92°	75	3.5	210	292	190	7.0
	100	4.0	222	305	205	8.2
	150	5.0	248	330	230	12.8
112°	75	3.5	184	279	240	6.8
	100	4.0	190	292	250	8.0
	150	5.0	210	318	275	12.5
135°	75	3.5	159	260	325	6.6
	100	4.0	159	273	325	7.8
	150	5.0	159	298	325	12.0

NOTE — For socket and spigot dimensions, see Table 1.

Table 14 Equal and Unequal Single Parallel Branches
(Clause 7.3)

All dimensions in millimetres.

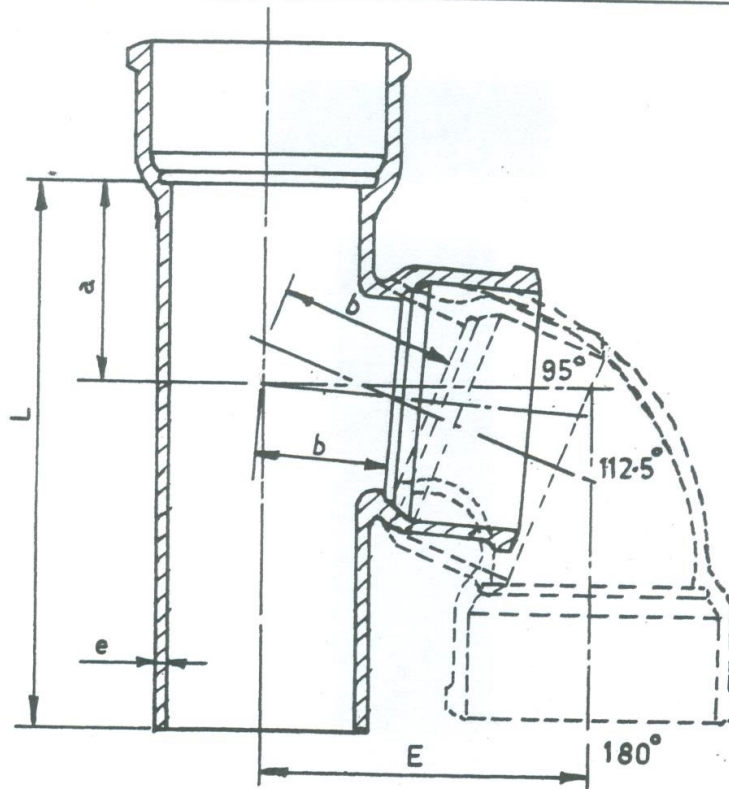


Nominal Diameter		Dimensions					Approximate Mass kg
Body DN	Branch dn	e	L	E	a	b	
100	100	4.0	280	167	116	102	7.5
100	50	4.0	240	140	89	90	6.0

NOTE — For socket and spigot dimensions, see Table 1.

Table 15 Equal and Unequal Inverted Branches Socket Type
(Clause 7.3)

All dimensions in millimetres.

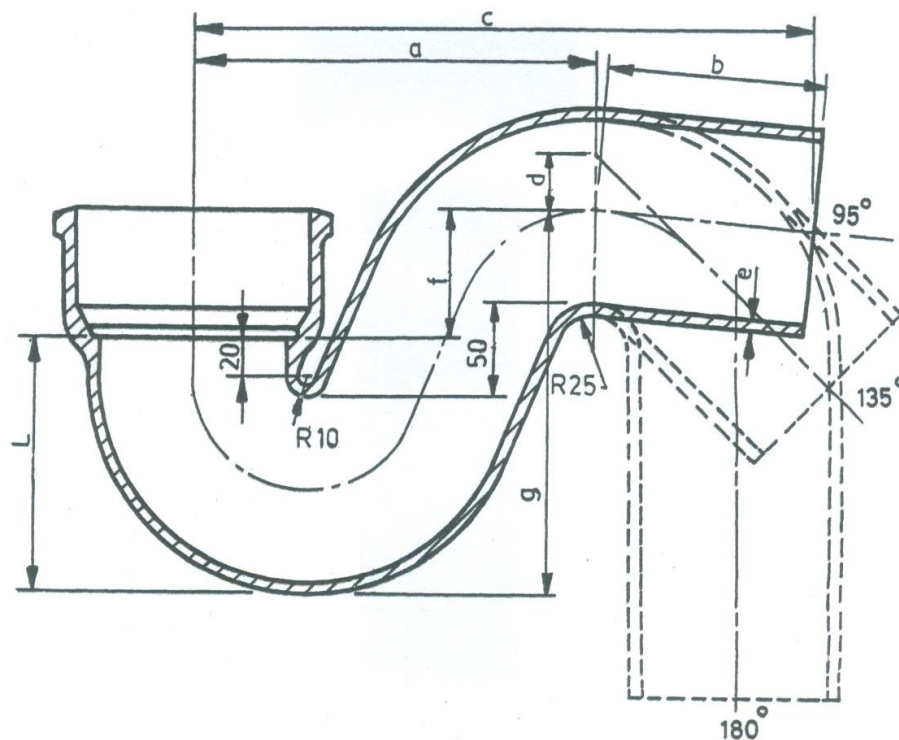


Angle θ	Nominal Diameter		Dimensions					Approximate Mass kg
	Body DN	Branches dn	e	b	E	L	e	
95°	50	50	70	38	—	192	3.5	2.4
	100	100	98	66	—	276	4.0	6.0
	100	50	70	63	—	210	4.0	4.4
112°	50	50	61	53	—	192	3.5	2.4
	100	100	79	91	—	276	4.0	6.1
	100	50	54	85	—	210	4.0	4.5
180°	50	50	70	60	113	192	3.5	2.8
	100	100	98	102	167	276	4.0	6.5
	100	50	70	90	140	210	4.0	5.0

NOTE — For socket and spigot dimensions see Table 1.

Table 16 Traps
(Clause 7.3)

All dimensions in millimetres.

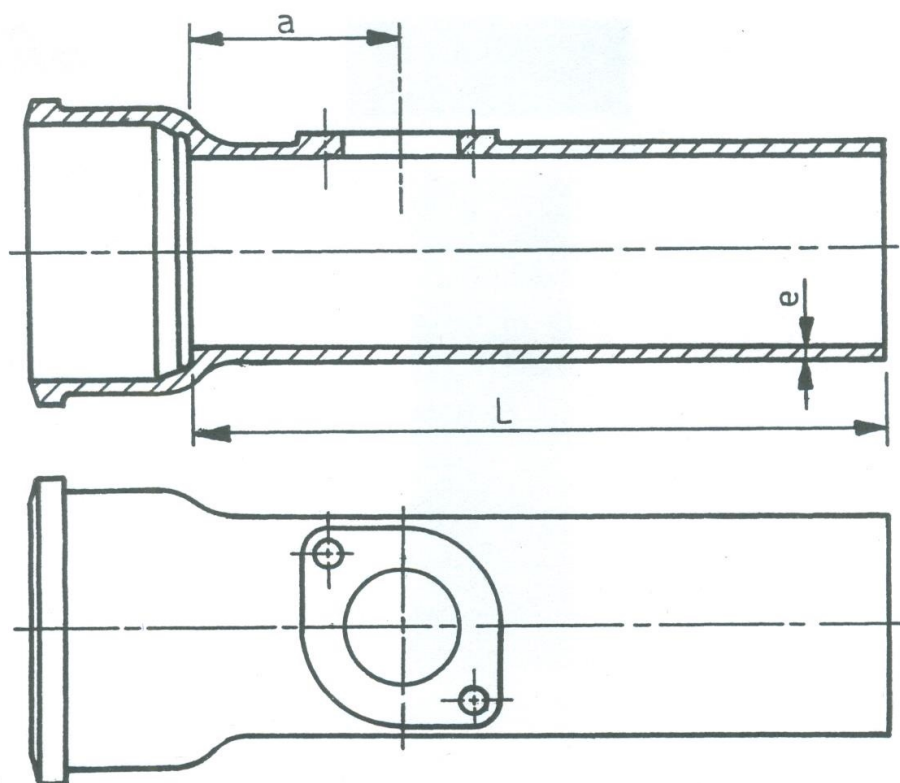


Angle θ	Nominal Diameter DN	Dimensions								Approximate Mass kg
		e	a	b	c	d	L	f	g	
95°	50	3.5	137	99	236	—	86	47	133	2.1
	75	3.5	170	105	275	—	110	55	165	4.3
	100	4.0	214	116	330	—	135	71	206	7.0
	150	5.0	285	140	425	—	186	98	284	10.5
135°	50	3.5	137	131	228	21	86	47	133	2.1
	75	3.5	170	149	277	25	110	55	165	4.3
	100	4.0	214	175	338	32	135	71	206	7.0
	150	5.0	285	235	455	39	186	98	284	10.5
180°	50	3.5	137	125	189	—	86	47	133	2.1
	75	3.5	170	159	231	—	110	55	165	4.3
	100	4.0	214	184	291	—	135	71	206	7.0
	150	5.0	285	239	387	—	186	98	284	10.5

NOTE — For socket and spigot dimensions, see Table 1.

Table 17 Straight Inspection Piece
(Clause 7.3)

All dimensions in millimetres.



Nominal Diameter <i>DN</i>	Dimensions			Approximate Mass kg
	<i>a</i>	<i>e</i>	<i>L</i>	
50	70	3.5	238	2.8
75	80	3.5	272	4.0
100	100	4.0	292	6.4
150	135	5.0	338	13.0
200	170	6.0	390	21.0

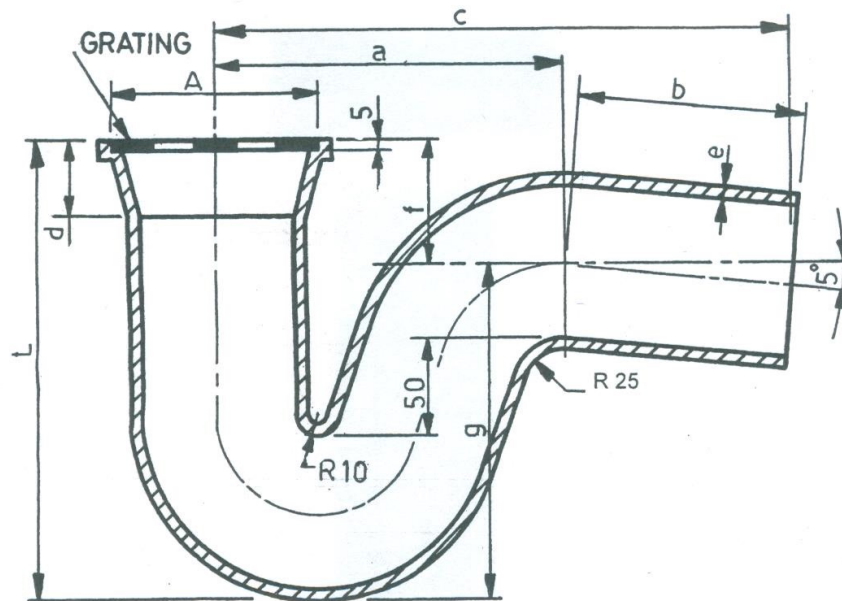
NOTES

1 For socket and spigot dimensions, see Table 1.

2 For details of access door, see Table 8.

Table 18 Floor Trap
(Clause 7.3)

All dimensions in millimetres.



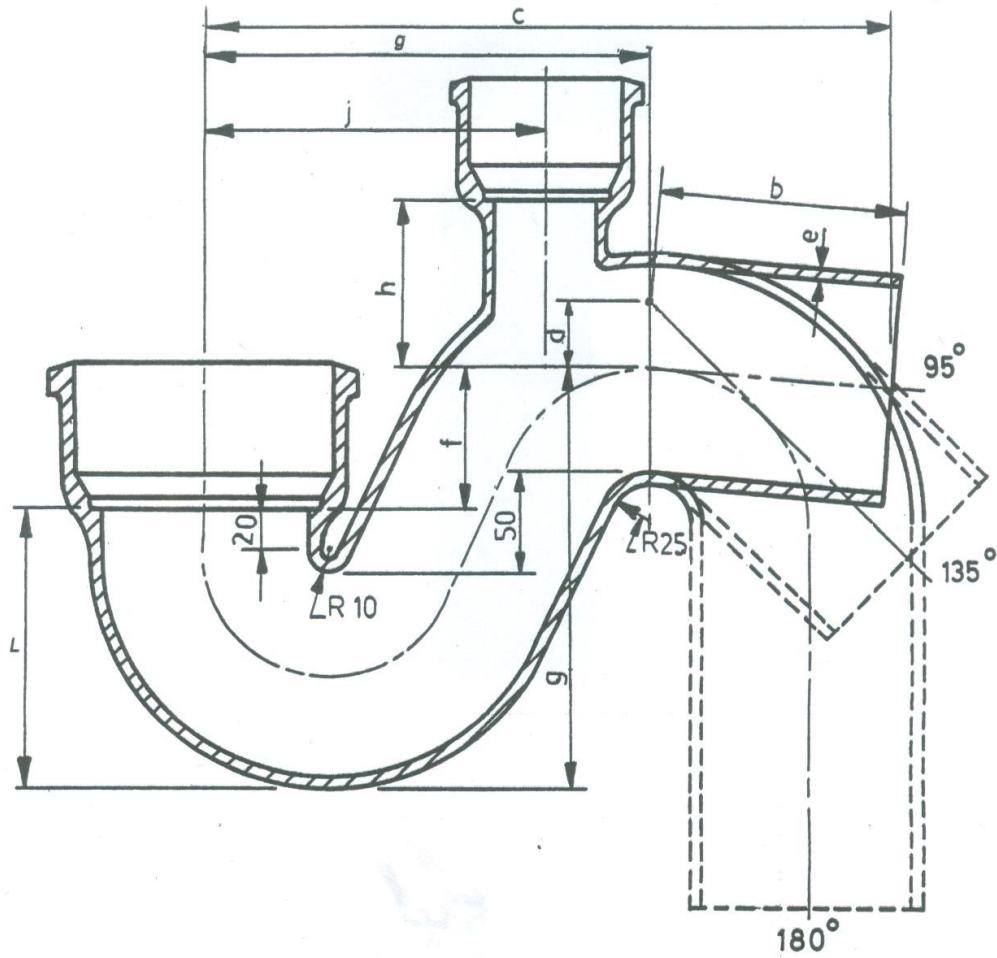
Nominal Diameter DN	Dimensions									Approximate Mass kg
	A	a	b	c	d	e	f	g	L	
50	100	137	99	236	30	3.5	45	133	175	2.5
75	100	170	105	275	40	3.5	60	165	225	4.8
100	200	214	116	330	60	4.0	90	206	296	7.5

NOTES

- 1 For socket and spigot dimensions, see Table 1.
- 2 Gratings may be hinged or screwed down.
- 3 Hinges shall be of galvanized iron.

Table 19 Traps With Vent
(Clause 7.3)

All dimensions in millimetres.

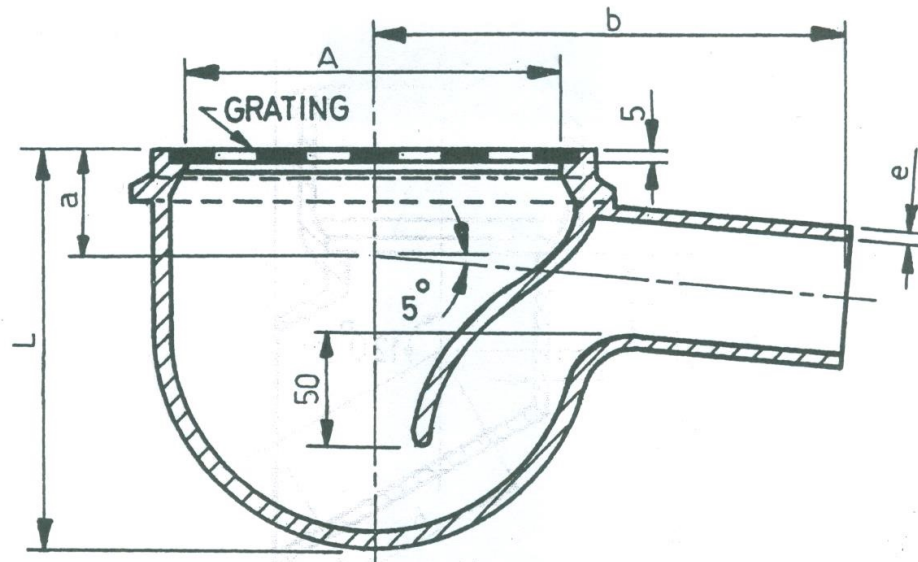


Angle θ	Diameter		Dimensions										Approximate Mass kg
	Body DN	Vent dn	a	b	c	d	e	L	f	h	i	j	
95°	100	50	214	116	330	—	4.0	135	71	80	165	206	7.8
135°	100	50	214	175	338	32	4.0	135	71	80	165	206	7.8
180°	100	50	214	184	291	—	4.0	135	71	80	165	206	7.8

NOTE — For socket and spigot dimensions, see Table 1.

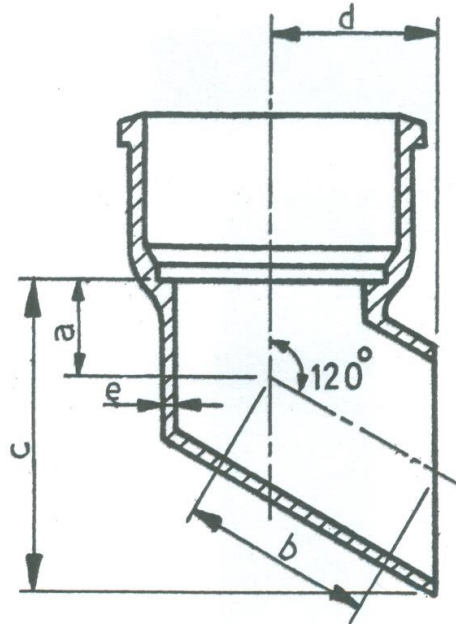
Table 20 Floor Trap (Nahani)
(Clause 7.3)

All dimensions in millimetres.



Nominal Diameter DN	Dimensions					Approximate Mass kg
	L	A	a	b	e	
50	175	165	45	205	4.0	5.50
75	225	165	60	215	4.0	6.50

Table 21 Shoe Bends
(Clause 7.3)
All dimensions in millimetres.

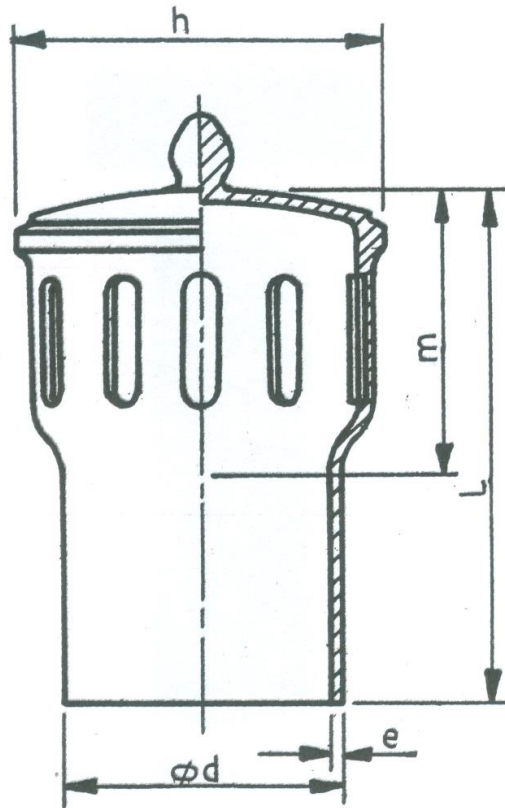


Nominal Diameter <i>DN</i>	Dimensions					Approximate Mass kg
	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	
50	36	66	100	54	3.5	1.4
75	38	75	117	64	3.5	2.0
100	52	92	161	80	4.0	2.8
150	55	123	200	105	5.0	4.5

NOTE — For socket and spigot dimensions, see Table 1.

Table 22 Cowl
(Clause 7.3)

All dimensions in millimetres.



Nominal Diameter <i>DN</i>	Dimensions					Approximate Mass kg
	<i>e</i>	<i>m</i>	<i>d</i>	<i>L</i>	<i>h</i>	
50	3.5	90	57	160	90	1.0
75	3.5	95	82	175	115	1.5
100	4.0	110	109	200	145	2.7
150	5.0	110	161	210	195	5.8

NOTE — For socket and spigot dimensions, see Table 1.

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This Indian Standard has been developed from Doc No. : MTD 6 (4811).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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Telephones : 2323 0131, 2323 3375, 2323 9402

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AMENDMENT NO. 1 APRIL 2011
TO
IS 3989 : 2009 CENTRIFUGALLY CAST (SPUN) IRON
SPIGOT AND SOCKET SOIL, WASTE, VENTILATING
AND RAINWATER PIPES, FITTINGS AND
ACCESSORIES — SPECIFICATION

(Third Revision)

(Page 2, clause 8.1, Table on tolerances, row 2, col 4) — Substitute '+ 3.5' for '± 3.5'

(Page 2, clause 8.1, Table on tolerances, row 3, col 4) — Substitute '+ 4.0' for '± 4.0'

(Page 2, clause 8.1, Table on tolerances for dimension DE, col 2, 3 and 4) — Add the following new row:

'200	±4.0	+4.0'
		-0

Reference: (BIS) (BIS) (BIS)
Not to be used (BIS) (BIS) (BIS)

AMENDMENT NO. 2 AUGUST 2012
TO
IS 3989 : 2009 CENTRIFUGALLY CAST (SPUN)
IRON SPIGOT AND SOCKET SOIL, WASTE,
VENTILATING AND RAINWATER PIPES,
FITTINGS AND ACCESSORIES — SPECIFICATION

(Third Revision)

(Page 4, Table 3, Angle θ) — Substitute '92½' for '92' and '112½' for '112'.

(Page 5, Table 4, Angle θ) — Substitute '92½' for '92' and '112½' for '112'.

(Page 5, Table 4, Approximate Mass of Double Branch with Door kg for Angle 92° and Nominal Diameter DN 100) — Substitute '7.8' for '78.0'.

(Page 5, Table 4, Approximate Mass of Single Branch plain kg for Angle 92° and Nominal Diameter DN 150) — Substitute '11.4' for '1.4'.

(Page 6, Table 5, Angle θ) — Substitute '92½' for '92' and '112½' for '112'.

(Page 12, Table 13, Angle θ) — Substitute '92½' for '92' and '112½' for '112'.



(MTD 6)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 3 MARCH 2017
TO
IS 3989 : 2009 CENTRIFUGALLY CAST (SPUN)
IRON SPIGOT AND SOCKET SOIL, WASTE,
VENTILATING AND RAINWATER PIPES FITTINGS AND
ACCESSORIES

(Third Revision)

(Page 5, clause 6.6, line 1) — Substitute ‘Nominal thickness and dimensions’ for ‘Nominal thickness, dimensions and approximate mass’.

(Page 6, Table 2) — Substitute ‘NOMINAL THICKNESS AND DIMENSIONS OF SOCKET AND SPIGOT PIPES’ for ‘APPROXIMATE MASS OF SOCKET AND SPIGOT PIPES’.

(Page 6, Tables 2, Approximate Mass Including Mass of Socket For Pipes of Length (L) in Metres) — Delete.

(Page 7, Tables 3, Approximate Mass of Bend) — Delete.

(Page 8, Tables 4, Approximate Mass of Single Branch, Approximate Mass of Double Branch)
— Delete.

(Page 9, Tables 5, Approximate Mass of Single Branch, Approximate Mass of Double Branch) — Delete.

(Page 10, Tables 6, Approximate Mass) — Delete.

(Page 11, Tables 7, Approximate Mass) — Delete.

(Page 12, Tables 8, Approximate Mass) — Delete.

(Page 13, Tables 9, Approximate Mass) — Delete.

(Page 14, Tables 10, Approximate Mass) — Delete.

(Page 15, Tables 11, Approximate Mass) — Delete.

(Page 16, Tables 12, Approximate Mass) — Delete.

Amendment No. 3 to IS 3989 : 2009

(Page 17, Tables 13, Approximate Mass) — Delete.

(Page 18, Tables 14, Approximate Mass) — Delete.

(Page 19, Tables 15, Approximate Mass) — Delete.

(Page 20, Tables 16, Approximate Mass) — Delete.

(Page 21, Tables 17, Approximate Mass) — Delete.

(Page 22, Tables 18, Approximate Mass) — Delete.

(Page 23, Tables 19, Approximate Mass) — Delete.

(Page 24, Tables 20, Approximate Mass) — Delete.

(Page 25, Tables 21, Approximate Mass) — Delete.

(Page 26, Tables 22, Approximate Mass) — Delete.

AMENDMENT NO. 4 FEBRUARY 2019
TO
IS 3989 : 2009 CENTRIFUGALLY CAST (SPUN)
IRON SPIGOT AND SOCKET SOIL, WASTE,
VENTILATING AND RAINWATER PIPES,
FITTINGS AND ACCESSORIES — SPECIFICATION

(Third Revision)

[Page 2, clause 7.3, line 1 (see also Amendment No. 3)] — Substitute ‘Nominal thickness and dimensions’ for ‘Nominal thickness, dimensions and approximate mass’.

[Page 3, Table 2, Title (see also Amendment No. 3)] — Substitute ‘**Table 2 Nominal Thickness and Dimensions of Socket and Spigot Pipes**’ for ‘**Approximate Mass of Socket and Spigot Pipes**’.

[Page 3, Table 2, Socket Mass, col 3 (see also Amendment No. 3)] — Delete.

[Page 3, Table 2, Notes 2, 5 and 6 (see also Amendment No. 3)] — Delete.

[Page 3, Table 2, Nominal Mass in kg Including Mass of the Socket for Pipes of Length (L) in Metres, cols 4 to 9 (see also Amendment No. 3)] — Delete.

[Page 4, Tables 3, Approximate Mass of Bend (see also Amendment No. 3)] — Delete.

[Page 5, Tables 4, Approximate Mass of Single Branch and Approximate Mass of Double Branch (see also Amendment No. 3)] — Delete.

[Page 6, Tables 5, Approximate Mass of Single Branch and Approximate Mass of Double Branch (see also Amendment No. 3)] — Delete.

[Page 7, Tables 6, Approximate Mass (see also Amendment No. 3)] — Delete.

[Page 8, Tables 7, Approximate Mass (see also Amendment No. 3)] — Delete.

[Page 9, Tables 8, Approximate Mass (see also Amendment No. 3)] — Delete.

Amendment No. 4 to IS 3989 : 2009

[Page 10, Tables 9, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 10, Tables 10, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 11, Tables 11, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 11, Tables 12, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 12, Tables 13, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 13, Tables 14, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 14, Tables 15, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 15, Tables 16, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 16, Tables 17, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 17, Tables 18, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 18, Tables 19, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 19, Tables 20, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 20, Tables 21, *Approximate Mass (see also Amendment No. 3)*] — Delete.

[Page 21, Tables 22, *Approximate Mass (see also Amendment No. 3)*] — Delete.

(MTD 06)